

Listing of Claims

1. (Currently Amended) A method comprising:
determining an operational link error rate of a link;
estimating a real-time physical link error rate of said link using said operational link error rate; and
identifying a physical link error alarm set threshold ~~applying a hysteresis factor, wherein~~
said identifying comprises use of a hysteresis factor and said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.
2. (Previously Presented) The method of claim 1,
wherein said link comprises a link between a first network element and a second network element of a communications network;
wherein said method further comprises,
detecting an operational link error on said link; and
wherein said determining said operational link error rate is responsive to said detecting.
3. (Original) The method of claim 2, further comprising:
transferring data on said link between said first network element and said second network element, wherein,
said detecting, said determining, and said estimating are performed at least partially concurrently with said transferring.
4. (Original) The method of claim 3, wherein said detecting comprises,
performing a cyclic redundancy check on at least a portion of said data.
5. (Original) The method of claim 4, wherein,
said transferring data on said link between said first network element and said second network element comprises,

transferring a data frame and a frame check sequence, and
 said performing a cyclic redundancy check comprises,
 performing an operation on said data frame to generate a result, and
 comparing said result to said frame check sequence.

6. (Original) The method of claim 3, wherein said estimating comprises:
 estimating a real-time bit error rate of said link.

7. (Original) The method of claim 3, wherein,
 said transferring data on said link between said first network element and said
 second network element comprises,
 transferring a plurality of data sets;
 said detecting said operational link error on said link between said first network
 element and said second network element comprises,
 detecting an operational link error within at least one of said plurality of
 data sets; and
 said estimating said real-time physical link error rate of said link comprises,
 indicating a physical link error for said at least one of said plurality of data
 sets.

8. (Currently Amended) The method of claim 3, further comprising:
~~identifying a physical link error alarm set threshold;~~
 comparing said physical link error alarm set threshold and said real-time physical
 link error rate; and
 generating an alarm signal in response to said comparing.

9. (Currently Amended) The method of claim 8, wherein said identifying
further comprises:
 receiving data specifying a user-specified link error alarm set threshold and a
 user-specified value of said hysteresis factor, ~~wherein~~
~~said user-specified hysteresis factor is a ratio of a physical link alarm set~~
~~threshold to a physical link alarm clear threshold;~~

determining a transmission bit rate of said link; and
 generating a physical link error alarm set threshold using said user-specified link
 error alarm set threshold, said hysteresis factor, and said transmission bit
 rate of said link.

10. (Original) The method of claim 3, further comprising:
 identifying a physical link error alarm clear threshold;
 comparing said physical link error alarm clear threshold and said real-time
 physical link error rate; and
 clearing an alarm signal in response to said comparing.

11. (Canceled)

12. **(Currently Amended)** A machine-readable medium having a plurality of
 instructions executable by a machine embodied therein, wherein said plurality of
 instructions when executed cause said machine to perform a method comprising:
 determining an operational link error rate of a link;
 estimating a real-time physical link error rate of said link using said operational
 link error rate; and
identifying a physical link error alarm set threshold ~~applying a hysteresis~~
~~factor, wherein~~
said identifying comprises use of a hysteresis factor and said hysteresis
 factor is a ratio of a physical link alarm set threshold to a physical link
 alarm clear threshold.

13. (Previously Presented) The machine-readable medium of claim 12,
 wherein said link comprises a link between a first network element and a second
 network element of a communications network;
 wherein said method further comprises,
 detecting an operational link error on said link; and
 wherein said determining said operational link error rate is responsive to said
 detecting.

14. (Original) The machine-readable medium of claim 13, said method further comprising:
transferring data on said link between said first network element and said second network element, wherein,
said detecting, said determining, and said estimating are performed at least partially concurrently with said transferring.
15. (Original) The machine-readable medium of claim 14, wherein said detecting comprises:
performing a cyclic redundancy check on at least a portion of said data.
16. (Original) The machine-readable medium of claim 15, wherein,
said transferring data on said link between said first network element and said second network element comprises,
transferring a data frame and a frame check sequence, and
said performing a cyclic redundancy check comprises,
performing an operation on said data frame to generate a result, and
comparing said result to said frame check sequence.
17. (Original) The machine-readable medium of claim 14, wherein said estimating comprises:
estimating a real-time bit error rate of said link.
18. (Original) The machine-readable medium of claim 14, wherein,
said transferring data on said link between said first network element and said second network element comprises,
transferring a plurality of data sets;
said detecting said operational link error on said link between said first network element and said second network element comprises,
detecting an operational link error within at least one of said plurality of data sets; and
said estimating said real-time physical link error rate of said link comprises,

indicating a physical link error for said at least one of said plurality of data sets.

19. **(Currently Amended)** The machine-readable medium of claim 14, said method further comprising:

identifying a physical link error alarm set threshold;
 comparing said physical link error alarm set threshold and said real-time physical link error rate; and
 generating an alarm signal in response to said comparing.

20. **(Currently Amended)** The machine-readable medium of claim 19, wherein said identifying **further** comprises:

receiving data specifying a user-specified link error alarm set threshold and a user-specified value of said hysteresis factor, ~~wherein said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;~~
 determining a transmission bit rate of said link; and
 generating a physical link error alarm set threshold using said user-specified link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link

21. **(Original)** The machine-readable medium of claim 14, said method further comprising:

identifying a physical link error alarm clear threshold;
 comparing said physical link error alarm clear threshold and said real-time physical link error rate; and
 clearing an alarm signal in response to said comparing.

22. **(Canceled)**

23. **(Currently Amended)** An apparatus comprising:
 a monitoring subsystem to determine an operational link error rate of a link and to estimate a real-time physical link error rate of said link using said operational link error rate and to identify a physical link error alarm set threshold ~~apply a hysteresis factor~~, wherein
said identifying comprises use of a hysteresis factor and said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold; and
 an alarm subsystem to generate an alarm signal in response to a comparison of said real-time physical link error rate and [[a]] said physical link error alarm set threshold.
24. **(Canceled)**
25. **(Original)** The apparatus of claim 23, wherein said monitoring subsystem comprises:
 a monitoring subsystem to detect an operational link error on said link.
26. **(Original)** The apparatus of claim 25, wherein
 said link comprises a link between a first network element and a second network element of a communications network; and
 said monitoring subsystem comprises
 a monitoring subsystem to determine said operational link error rate of said link and to estimate said real-time physical link error rate of said link using said operational link error rate at least partially concurrently with a transfer of data between said first network element and said second network element on said link.
27. **(Original)** The apparatus of claim 26, wherein said monitoring subsystem to detect said operational link error on said link comprises:
 a monitoring subsystem to perform a cyclic redundancy check on at least a portion of said data.

28. (Original) The apparatus of claim 26, wherein said cyclic redundancy check comprises a frame check sequence check.

29. (Original) The apparatus of claim 23, wherein said alarm subsystem comprises:

an alarm subsystem to clear said alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm clear threshold.

30. (Currently Amended) An apparatus A method comprising:

~~means for~~ determining an operational link error rate of a link;

determining an evaluation time period of the link; and

~~means for~~ estimating a real-time physical link error rate of said link by

employing both ~~using~~ said operational link error rate and said evaluation time period; and

~~means for~~ applying a hysteresis factor, wherein

said evaluation time period is approximated by dividing the value of a hysteresis factor, defined as a ratio of a physical link alarm set threshold to a physical link alarm clear threshold, by the product of a link error alarm set threshold and the transmission bit rate of said link, hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.

31. (Currently Amended) The apparatus method of claim 30,

wherein said link comprises a link between a first network element and a second network element of a communications network; and

wherein said apparatus method further comprises, ~~means for~~ detecting an operational link error on said link; and

wherein ~~coupled with said means for~~ said determining said operational link error rate is responsive to said detecting of said link.

32. **(Currently Amended)** A method for identifying a physical link error alarm set threshold comprising:

- receiving data specifying a user-specified link error alarm set threshold and a user-specified hysteresis factor, wherein
- said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;
- determining a transmission bit rate of said link; and
- generating **[[a]] the** physical link error alarm set threshold using said user-specified link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link.